

28. A system for calibrating positions between the surface of a whiteboard and a display device of a computer comprising:  
a whiteboard including a location sensing surface;  
a computer including a display device; and  
a calibration initiation means distant the computer;  
wherein upon activation of the calibration initiation means, positions between the surface of the whiteboard and a display of the computer are calibrated.

29. The system for calibrating positions according to Claim 28, further comprising:  
a projector in communication with the computer for projecting an image onto the whiteboard; and  
wherein the calibration initiation means includes a projection icon located on the whiteboard.

30. The system for calibrating positions according to Claim 29, wherein activation of the calibration initiation means is by stylus actuation of the projection icon.

### REMARKS

By the *Office Action* of 10 May 2002, Paper No. 7, Claims 1-16 are pending in the Application, and all rejected. By the present *Response and Amendment*, the Applicant clarifies the invention, and in so doing, overcomes the rejection of the Claims in view of the cited art.

#### 1. General Observations

The present invention is a method and system for calibrating positions on the surface of a location sensing whiteboard to positions on a projected display. There are generally two steps involved in the calibration of a projected image and the whiteboard. The first step is, in essence, to tell the whiteboard that you are ready to begin the calibration process. The second step follows the first, and includes the actual calibration of the display.

As the Title of the application implies, the present invention is directed to the first step, the Initial Calibration Of A Location Sensing Whiteboard To A Projected Display.

Conventional calibration systems incorporate disadvantages, as noted in the application:

One of the complications present in using electronic whiteboards is the calibration of the whiteboard. Calibration is necessary so that the computer can properly relate positions on the whiteboard to locations on the computer display device, and thus, properly interpret touch inputs detected on the surface of the electronic whiteboard. *Typically, calibrating the electronic whiteboard involves the user operating at the computer, rather than at the electronic whiteboard, to start a calibration. Then, after the user initiates the initial calibration at the computer, the user must perform a calibration of the electronic whiteboard.* This complicated procedure, usually calling for the assistance of another person, scares novice technology users away from electronic whiteboard technology, and overcomplicates the set-up process for those who do use electronic whiteboards. *Specification, Page 2, Lines 7-17 (emphases added).*

The present invention overcomes the disadvantages in the prior art by providing the location of the first step of the calibration process *distant* from the computer (that is, not requiring the user to begin the calibration process at the computer). In the conventional process, the user touches the computer to begin the calibration process, then must move to the whiteboard to run the calibration and begin the presentation.

The improved process of the present invention enables one to begin the initiation of the calibration process without being directly at the computer to start the process, so the presentation is not broken up by the user moving between the computer and the whiteboard. In preferred embodiments, the user can begin the calibration process at the whiteboard via interaction with the whiteboard surface or through a voice command.

The physical surface of the electronic whiteboard 100 includes a menu bar 106, which in the exemplary embodiment, includes a calibration button which is the predefined location for beginning the calibration sequence once touch is detected. However, those skilled in the art will appreciate that the predefined location may be not only a logical calibration button on a menu bar 106, but any predefined location or command which may be programmed to begin the calibration sequence, such as an actual physical button located on the frame of the whiteboard, on the whiteboard surface, or remotely from the whiteboard frame or surface. Alternatively, the calibration sequence may also be initiated by a detected voice command. *Specification, Page 4, Lines 22-30.*

This improvement to the calibration process of the present invention eliminates the need for two assistants, one to start the calibration at the computer, and another to then run the calibration at the whiteboard. The present invention enables just one user to remain in proximity of the whiteboard to initiate and run the calibration. As disclosed:

... the present invention is “one-touch” initial calibration process and system for a location sensing electronic whiteboard. The calibration method and system of the present invention overcomes the complications posed by the prior art by providing an easy and simple way to calibrate an electronic whiteboard. *A mechanism on the electronic whiteboard signals the computer to begin the calibration procedure before the computer has projected a GUI (graphical user interface) onto the electronic whiteboard surface. Specification, Page 2, Lines 23-29 (emphases added).*

Thus, the pending Claims have been clarified, and new Claims presented, to recite improvements to the conventional calibration process, which conventional process comprises:

- providing a location sensing device;
- providing an electronic device;
- initiating the calibration *at the electronic device*, and
- performing the calibration of positions between the location sensing device and the electronic device.

The present invention provides the improvement that the step of initiating the calibration be *at a location distant the electronic device*, preferably being at the whiteboard itself, or in proximity to the whiteboard via a button or device capable of receiving voice commands.

For example, Claim 1 has been amended to include the recitation that “the calculating step is initiated upon completion of the detecting step”. This recitation confines the first step of the conventional calibration process (initiating the process) to an initiation that is distant the electronic device (the computer), wherein the detection of a touch *upon the location sensing electronic device* (whiteboard) initiates the calibration process. That the initiation of the calibration process is not begun at the computer respectfully places this Claim 1 in form for allowance.

As the cited references mainly relate to the second step of the two-step calibration process (not the first as do the present Claims), and as the cited prior art neither teach or suggest the initiating of a calibration sequence *at a location distant a computer*, it is respectfully submitted that the present invention is novel and non-obvious over the cited references.

## **2. Claim Objections**

Claims 2 and 6 are objected to because of informalities. Claim 2 has been amended to overcome this objection, with language kindly suggested by the Examiner. Claim 6 has been cancelled.

## **3. Claim Rejections**

Claims 1-16 are rejected under 35 U.S.C. § 103 as being unpatentable over Geaghan et al. in view of Kitada. Applicants respectfully traverse this grounds of rejection, as described more fully above, as the Claims of the present application have been clarified to recite limitations neither taught nor suggested by the prior art, namely, the initiation of the calibration process at a location distant the computer, and preferably by a touch in proximity to the whiteboard.

## **4. Fees**

A two month extension of time petition and fee accompany this *Response and Amendment*. There are twenty (20) claims, four (4) of which are independent, pending in the application as a result of this *Response and Amendment*. As four (4) independent were paid for and filed with the application as initially filed, no additional Claim fees are believed due.

## CONCLUSION

By the present *Response and Amendment*, the Application has been in placed in full condition for allowance. Accordingly, Applicants respectfully request early and favorable action. Should the Examiner have any further questions or reservations, the Examiner is invited to telephone the undersigned Attorney at 404.885.2773.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, BOX: FEE - TWO MONTH EOT AMENDMENT, Washington, D.C. 20231, on 03 October 2002.

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Name of Applicant Assignee, or  
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03 October 2002

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## APPENDIX A

1. (once amended) A method of calibrating positions between a location sensing electronic device and an electronic device coupled to a display device, comprising the steps of:  
projecting an image onto a surface of [a] the location sensing electronic device;  
detecting a touch at a predefined [calibration] point on the surface of the location sensing electronic device; and

calculating a relationship between the predefined [calibration] point on the surface of the location sensing electronic device and a position on the display device;

wherein upon detecting the touch, the calculating step is initiated.

2. (once amended) The method of claim 1, wherein detecting a touch at a predefined [calibration] point comprises detecting selection of an actual button on the surface of the location sensing electronic device.

4. (once amended) The method of claim 1, wherein detecting a touch at a predefined [calibration] point comprises detecting selection of a[n] projected button on the surface of the location sensing electronic device.

9. (once amended) A system for calibrating positions between the surface of a location sensing electronic device and a display device [coupled to] of an electronic device, comprising:  
a location sensing electronic device [comprising] including a location sensing surface [and an exterior frame];

an electronic device [comprising] including a display device, [and coupled to] the electronic device in communication with a projection device and the location sensing electronic device;

[a] the projection device [coupled to the electronic device comprising] including means for projecting an image on the location sensing electronic device; and

a calibration initiation means distant the electronic device;

wherein [a predefined location on the location sensing device is programmed to calibrate] upon activation of the calibration initiation means, positions between the surface of a location sensing electronic device and the display of an electronic device are calibrated.

10. (once amended) The system of claim 9, wherein the calibration initiation means [predefined location] is a projected button on the surface of the location sensing electronic device.

17. (new) In a method of calibration including the steps of (i) providing a location sensing device, (ii) providing an electronic device, (iii) initiating the calibration, and (iv) performing the calibration of positions between the location sensing device and the electronic device, an improvement wherein the step (iii) of initiating the calibration comprises initiating the calibration at a location distant the electronic device.

18. (new) The improved method of calibration of Claim 17, wherein the location sensing device is a whiteboard, and wherein the electronic device is a computer.

19. (new) The improved method of calibration of Claim 17, further comprising the step of projecting an image onto the location sensing device.

20. (new) The improved method of calibration of Claim 17, wherein the step of initiating the calibration at a location distant the electronic device comprises initiating the calibration with an actuation of the location sensing device.

21. (new) The improved method of calibration of Claim 20, wherein the actuation of the location sensing device is by stylus actuation.

22. (new) The improved method of calibration of Claim 21, wherein the actuation of the location sensing device is by stylus actuation of an image of a button.

23. (new) The improved method of calibration of Claim 22, wherein the actuation of the location sensing device is by an electronically-detected stylus over an image of a button.

24. (new) The improved method of calibration of Claim 20, wherein the actuation of the location sensing device is by a touch.

25. (new) The improved method of calibration of Claim 17, wherein the step of initiating the calibration at a location distant the electronic device comprises initiating the calibration with the actuation of a button on a surface of the location sensing device.

26. (new) The improved method of calibration of Claim 17, wherein the step of initiating the calibration at a location distant the electronic device comprises initiating the calibration with the actuation of a button on a frame of the location sensing device.

27. (new) The improved method of calibration of Claim 17, wherein the step of initiating the calibration at a location distant the electronic device comprises initiating the calibration with a voice command.

28. (new) A system for calibrating positions between the surface of a whiteboard and a display device of a computer comprising:

a whiteboard including a location sensing surface;

a computer including a display device; and

a calibration initiation means distant the computer;

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